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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,259	05/04/2001	Daniel R. Jeske	2925-0575P	6336
30594	7590	07/14/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			WARE, CICELY Q	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/848,259	JESKE ET AL.
	Examiner	Art Unit
	Cicely Ware	2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 04 May 2001.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-5 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 5 is/are allowed.  
 6) Claim(s) 1-4 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 04 May 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 2.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

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## **DETAILED ACTION**

### ***Drawings***

1. Examiner suggests applicant use a uniform font for all drawings.
2. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

### ***Specification***

3. The abstract of the disclosure is objected to because
  - a. Pg. 10, line 1, examiner suggests applicant re-write this line for clarification purposes.
  - b. Pg. 10, line 6, applicant uses the phrase "dependent on a polarities. Examiner suggests using "dependent on the polarities" for clarification purposes. Correction is required. See MPEP § 608.01(b).
4. The disclosure is objected to because of the following informalities:
  - a. Pg. 4, line 17, Pg. 5, line 21 and Pg. 6, line 16, examiner suggests applicant replace the "UNKNOWN" application number with an actual US Patent Application number for clarification purposes. Appropriate correction is required.

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5. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

6. Claims 1 and 4 are objected to because of the following informalities:

a. Claim 1, line 5, applicant uses the phrase "dependent on a polarities".

Examiner suggests using "dependent on the polarities" for clarification purposes.

b. Claim 4, lines 2-3, applicant uses the phrase "plurality of received data symbol sample". Examiner suggests using "plurality of received data symbol samples" for clarification purposes.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

7. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 3 recite "substantially dependent". Substantially is vague and indefinite because it does not reference a definite boundary for the limitations of the claim.

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***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Nguyen (US Patent 5,025,455).

(1) With regard to claim 1, Nguyen discloses in (Fig. 5) a method of estimating a signal-to-noise ratio (SINR), comprising: estimating polarities (49, 52) of a plurality of received data symbol samples (46, 48); and generating an SINR estimate based on the plurality of received data symbol samples and the estimated polarities of the plurality of received data symbol samples such that the SINR estimate is not substantially dependent on a polarities of the plurality of received data symbol samples (col. 9, lines 22-57).

(2) With regard to claim 2, claim 2 inherits all the limitations of claim 1. Nguyen further discloses in (Fig. 5) wherein the generating step multiplies (53, 54) each of the plurality of received data symbol sample by an associated estimated polarity, and generates the SINR estimate using the multiplication results as data symbol samples in an SINR estimation algorithm (46b, 49, 53, 48a, 52, 54).

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10. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Litton et al. (US Patent 5,576,715).

With regard to claim 3, Litton et al. disclose in (Fig. 6) a method of estimating a signal-to-noise ratio (SINR), comprising: estimating bit values (200, 196) of a plurality of received data symbol samples (184, 186); and generating an SINR estimate based on the plurality of received data symbol samples and the estimated bit values of the plurality of received data symbol samples such that the SINR estimate is not substantially dependent on a bit value of the plurality of received data symbol samples (col. 7, lines 44-46, col. 11, lines 43-50, 53-57).

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen (US Patent 5,025,455) as applied to claim 1 above, in view of Litton et al. (US Patent 5,576,715).

With regard to claim 4, claim 4 inherits all the limitations of claim 1. However Nguyen does not disclose wherein the generating step multiplies each of the plurality of received data symbol sample by an associated estimated bit value, and generates the

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SINR estimate using the multiplication results as data symbol samples in an SINR estimation algorithm.

However Litton et al. discloses in (Fig. 6) wherein the generating step multiplies (198, 206) each of the plurality of received data symbol sample (184, 192) by an associated estimated bit value (200, 196), and generates the SINR estimate using the multiplication results as data symbol samples in an SINR estimation algorithm (col. 11, lines 24-57).

Therefore it would have been obvious to one of ordinary skill in the art to modify Nguyen to incorporate wherein the generating step multiplies each of the plurality of received data symbol sample by an associated estimated bit value, and generates the SINR estimate using the multiplication results as data symbol samples in an SINR estimation algorithm in order to account for the ionospheric refraction of the signals (Litton et al., col. 11, lines 19-20).

13. Claim 5 is allowed.

14. The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses a method of estimating a signal-to-noise ratio. Prior art references show similar methods but fail to teach converting the received data symbol samples into quasi-pilot symbol samples based on the estimated polarities; and generating an SINR estimate based on the quasi-pilot symbol samples along with the remaining limitations of the independent claims.

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***Conclusion***

15. The prior art made record of and not relied upon is considered pertinent to applicant's disclosure:

- a. Kamel et al. US Patent 6,697,343 discloses a method and apparatus for controlling power for variable-rate vocoded communications.
- b. McCallister et al. US Patent 5,878,085 discloses a trellis coded modulation communications using pilot bits to resolve phase ambiguities.

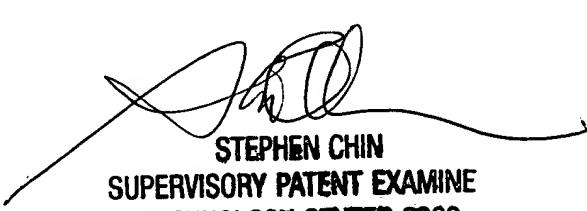
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 703-305-8326. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

*Cicely Ware*

cqw  
July 3, 2004

  
STEPHEN CHIN  
SUPERVISORY PATENT EXAMINEE  
TECHNOLOGY CENTER 2800